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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,109	11/17/2003	Takayoshi Tanji	117788	9792
25944	7590	05/19/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			VANORE, DAVID A	
			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/713,109

Applicant(s)

TANJI, TAKAYOSHI

Examiner

David A. Vanore

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 8-13 and 19-24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Dingley (USPN 5,576,543).

Regarding claims 1 and 14, Dingley teaches a transmission electron microscope (12) and method of imaging a sample comprising an electron beam source (16) to irradiate a specimen, a deflector (26) in front of the source to generate multiple beams incident on the sample at different angles (Col. 3 Line 57 through Col. 4 Line 57, and Fig. 4), and a three-dimensional displaying device in which combined first and second images are displayed to show an image of the crystal orientation of the sample (Item 54). Dingley at Col. 5-6 details the process of obtaining multiple images and combining them to produce a crystalline orientation image of the sample for display where each image has its own associated angle of incidence of the electron beam on the sample surface.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dingley in view of Müller et al. (USPN 4,097,739).

Regarding claims 2-5 and 15-18, Dingley teaches all the required limitations of claims 1 and 14 as pointed out above, and teaches the following with respect to claims 3-5 and 16-18:

Dingley teaches that the incident beam is inclined with respect to the normal of the sample surface in the range of 0-10 degrees (Col. 6 Lines 23-34) and that the beam is incremented through this range, and about the normal axis in any variable step size. Dingley therefore teaches that a first beam is incident on the sample on one side in the range of 0-5 degrees from the normal, and that a second beam is incident on the sample in the range of 0-5 degrees from the normal as recited in claims 3 and 16.

Dingley teaches that the device is further provided with an imaging device comprising a scintillation plate (34) coupled to a video camera (36) and a camera control means (40) which takes images of each of the incident beams on the sample (Col. 3 Lines 17-28) as recited in claims 4 and 17.

Claims 5 and 18 require that the irradiation of the electron beams are synchronized with an operating signal of the imaging device. Firstly, the scintillation plate 34 will respond to incident radiation and requires no operating signal. The imaging means comprising the video camera (36) must be synchronized such that it operates

when the beam is irradiating the specimen or it will not capture the image generated by the scintillation plate (34) in Dingley. Therefore, when irradiation of the specimen is being performed in the Dingley apparatus and method of imaging, the imaging means is also operating, and therefore, Dingley teaches the required limitation of claims 5 and 18.

Dingley fails to teach a deflector, which comprises deflection plates. Dingley recites that deflection means (26) is a deflector and does not specify what physical arrangement is given to the deflector, save that it is required to deflect the beam as required on Col. 3-4 in Dingley.

Müller et al. teaches a transmission electron microscope comprising an electron beam source (1) and in front of said source, deflection means (10 and 11), where at Col. 2 Lines 29-38, Müller et al. teaches that alternatively teaches that the deflection means may be coils or plates. Müller et al. further teaches that the electron beam is tilted with respect to the specimen in the arrangement of Fig. 1 in Müller et al. similarly to the requirement of claims 1 and 14 of the instant application.

Müller et al. accounts for the deficiencies of Dingley by teaching that deflectors in the form of coils or plates may alternatively be used as deflection means.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a deflector in the form of a deflection plate because the

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use of a deflection means in the form of a plate deflector does not appear to be critical to the practice of the invention, and does not produce an unexpected result. As taught in Müller et al., whether one skilled in the art uses coil or plate deflectors is not critical as the two types may be used interchangeably to accomplish controlled deflection of a charged particle beam.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dingley in view of Müller et al.

Dingley teaches all the limitations of claim 1 as pointed out above.

Dingley fails to teach an irradiation lens between a deflector and a sample as recited in claim 6, or an irradiation lens between a beam source and a deflector as recited in claim 7.

Müller et al. discloses in Fig. 2 an irradiation lens 15 between a deflector 10 and a sample 8, and further that the irradiation lens 15 is between a beam source 1, and a deflector 11. Müller et al. further teaches that the field of view is determined by the position of the lens relative to the deflection stage.

Müller et al. taken with Dingley would have led one of ordinary skill to provide a lens positioned between electron beam source and deflection stage, and also between a deflection stage and specimen.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a lens positioned between electron beam source and deflection stage, and also between a deflection stage and specimen in the transmission electron microscope of Dingley because Müller et al. teaches that a lens so positioned allows the area traveled by the beam to be substantially increased (Col. 3 Lines 4-41 of Müller et al.).

Allowable Subject Matter

Claims 8-13 and 19-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 8 and 19 require that the deflection means of claim 1 comprise a pair of filaments and a pair of plates situated outside the filaments and that potential be applied to the filaments and plates such that potential distribution to the filaments and plates is defines a trapezoidal form when plotted as potential versus the spatial distribution of the filaments and plates. The main reason for indicating allowable subject matter is that such a deflection means is not taught or suggested in the prior art in a way that would render claims 8 and 19 unpatentable. Therefore, claims 8 and 19 contain allowable subject matter. Claims 9-13 and 20-24 are indicated as being allowable for the same reasoning by virtue of their dependency.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dav



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